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**TRANSMITTAL OF APPEAL BRIEF (Large Entity)**

Docket No.  
ITL 0691US

Inventor: Paul S. Collins

Serial No.	Filing Date	Examiner	Group Art Unit
10/039,015	January 2, 2002	Alexander Gilman	2833

Invention: Coil Spring Extension Mechanism for a PC Card

TO THE COMMISSIONER FOR PATENTS:

Transmitted herewith in triplicate is the Appeal Brief in this application, with respect to the Notice of Appeal filed on January 21, 2004.

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- ☐ The Director has already been authorized to charge fees in this application to a Deposit Account.
- ☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 20-1504

  
Signature

Dated: February 20, 2004

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:	Paul S. Collins	§	Group Art Unit:	2833
Serial No.:	10/039,015	§		
Filed:	January 2, 2002	§	Examiner:	Alexander Gilman
For:	Coil Spring Extension Mechanism for a PC Card	§	Atty. Dkt. No.:	ITL.0691US (P13222)
Customer No.:	21906	§	Confirmation No.:	7522

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

APPEAL BRIEF

Sir:

Applicants respectfully appeal from the final rejection mailed December 2, 2003.

I. REAL PARTY IN INTEREST

The real party in interest is the assignee Intel Corporation.

II. RELATED APPEALS AND INTERFERENCES

None.

III. STATUS OF THE CLAIMS

Claims 1, 2, and 10-17 have been finally rejected and are the subject of this appeal.

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Date of Deposit: February 20, 2004

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*Cynthia L. Hayden*  
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#### IV. STATUS OF AMENDMENTS

All amendments have been entered.

#### V. SUMMARY OF THE INVENTION

Referring to Fig. 1, a personal computer (PC) card 10 may include a generally flat housing 12 having electrical contacts 14 on one edge and an extendable antenna 16 on the other edge. The housing 12 may house electronic components to implement wireless communications. For example, a personal computer may receive the card 10 and may thereby be able to wirelessly communicate with other personal computers. Specification, at page 2, line 24 through page 3, line 6.

Referring to Fig. 2, by pushing on the retracted antenna 16, the antenna 16 can be caused to spring outwardly. The antenna 16 includes an antenna element 18 that may be a flat metallic element. Specification, at page 3, line 7 through line 10.

Referring to Fig. 3, the card 10 may include a printed circuit board 22 with a plurality of components for implementing wireless communications. Those components may be electrically connectable to the antenna element 18 through a spring contact 24. The spring contact 24 on the printed circuit board 22 makes an electrical connection with the contact 26 when the antenna 16 is extended out of the housing 12. Specification, at page 3, line 11 through line 18.

The antenna 16 may include a traveler 20 on one end. The traveler 20 includes the contact 26 that makes an electrical connection to the spring contact 24 when the antenna 16 is extended. See specification at page 3, line 19 through line 22.

The outward extension of the antenna 16 is under control of a compressed coil spring 32 which includes an upper portion 32a and a lower portion 32b. The antenna 16 may be held in a retracted position against the force of the spring 32 by an L-shaped resilient catch 36. The catch 36 includes a transverse end 36a and a helical coil 34. Specification, at page 3, line 23 through page 4, line 2.

As referred to herein, “proximal” refers to items that are closer to the contact 14 and “distal” refers to items closer to the position where the antenna 16 extends outwardly from the

housing 12. Thus, the helical coil 34 is proximal relative to the distal transverse end 36a of the catch 36. Specification, at page 4, line 3 through line 8.

The traveler 20 rides on a track 28 so as to extend from its proximal position shown in Fig. 3 to its distal position shown in Fig. 4. The extent of distal extension of the antenna 16 may be controlled by a stop 38 that limits the distal extension of the U-shaped housing 30 on the track 28. Specification, at page 4, line 9 through line 14.

Referring to Fig. 4, the spring 32 may be wound around a telescoping rod so as to push the traveler 20 distally, causing the antenna 16 to extend out of the housing 12. In this position, the end 36a of the catch 36 is released from the side of the traveler 20. The traveler 20 transitions distally over the track 28 to extend the antenna 16. Specification, at page 4 line 15 through line 20.

The side-to-side extension of the catch 36 is controlled by the tension supplied by the helical coil 34 and by the internal resiliency of the catch 36. Specification, at page 4 line 21 through line 23.

As noted in Fig. 4, the contact 24 makes contact with the contact 26 on the traveler 20, allowing radio frequency signals to be transmitted or received from the integrated circuits included on the printed circuit board 22. Specification, at page 4 line 24 through page 5, line 2.

The extent of outward extension of the antenna 16 from the housing 12 may be increased by offsetting the coil spring 32 from the track 28. That is, by allowing the coil spring 32 to actually extend beyond the track 28 at the proximal end, greater antenna 16 outward extension can be achieved. Specification, at page 5, line 3 through line 8.

The printed circuit board 22 includes a protrusion 23 that engages a protrusion 25 on the traveler 20. This provides a snap action when the antenna 16 is retracted to its proximal position, shown on Fig. 3, from its distal position shown in Fig. 4. Specification, at page 5, line 9 through line 13.

Referring to Fig. 5, the traveler 20 rides on an L-shaped element 42 secured to the housing 12. One end of the helical coil 34 and one end of the spring 32 may be secured in the L-shaped member 42. Also secured to the L-shaped element 42 is the track 28. In one

embodiment, the U-shaped housing 30 may include a cantilevered, L-shaped resilient arm 30 on each side of the track 28 to releasably, slideably engage and be guided by the track 28.

Specification, at page 5 line 14 through line 21.

When the traveler 20 begins to extend distally from the position shown in Fig. 5, the end 36a of the catch 36 disengages from the traveler 20 to allow distal movement. Thus, the end 36a is flexed laterally, allowing the traveler 20 to extend distally, as shown in Fig. 6. Specification, at page 5 line 22 through line 26.

Turning next to Fig. 7, the end 36a travels in a groove 44 in the edge of the traveler 20. The groove 44 includes a generally straight portion 45 and, at the distal end, a generally heart-shaped portion 46. The heart-shaped portion 46 right side includes an inclined track portion 56 that causes the end 36a to extend away from the groove 44 and then to fall and be locked in to releasably locked position 50. In this position, the traveler 20 is held against distal extension outwardly of the housing 12. See specification at page 5, line 9 through page 6, line 9. Specification, at page 6, line 1 through line 9.

In order to free the antenna 16 for extension, the antenna 16 must be pushed proximally causing the protrusion 52 to wedge the end 36a to the left side of the heart-shaped portion 46 of the groove 44, as shown in Fig. 7, freeing the end 36a from its entrapment within the locked position 50. This release allows the spring 32 to take over, causing the end 36a to ride back down the track portion 54 and down the straight portion 45 while the antenna 16 extends distally. Specification, at page 6, line 10 through line 18.

Thus, referring to Fig. 8, when the end 36a is trapped in the position 50, the antenna 16 is releasably locked against distal movement. When the antenna 16 is pressed down, the protrusion 52 wedges the end 36a to the left allowing it to be released through the left lateral track portion 54. Specification, at page 6, line 19 through line 24.

## VI. ISSUES

- A. Is Claim 1 Obvious Over Johnson in View of Ishida?**
- B. Is Claim 11 Obvious Over Johnson in View of Ishida?**
- C. Is Claim 16 Obvious Over Johnson in View of Ishida?**

## VII. GROUPING OF THE CLAIMS

Claims 2 and 10 may be grouped with claim 1.

Claims 12-15 may be grouped with claim 11.

Claim 17 may be grouped with claim 16.

## VIII. ARGUMENT

- A. Is Claim 1 Obvious Over Johnson in View of Ishida?**

Claim 1 calls for a catch that retains the antenna in the retracted position in said track, said catch being spring biased.

The final rejection points out that Ishida teaches a cantilevered leaf spring 28. However, this spring does not retain any antenna in a retracted position. First of all, Ishida does not relate to an antenna. Ishida relates to a PC card. The problem that Ishida is trying to overcome is that when an injector button is projecting outwardly from the case while the PC card is loaded in its slot, the button can be inadvertently operated.

Thus, in Ishida, the idea is to lock the button in a retracted position, not to lock an antenna or even the PC card. This is explicitly explained in column 2, lines 32-40. There it is explained that the PC card is inserted into the receiving cavity of the housing. The card pushes the receiving unit rearwardly which in turn pushes the ejector bar 4 forwardly. At this point, the intermediate bar 10 is biased on a side of the ejector button section 20 and the cam follower end 30 of the spring member 28 is at the lock position. According to Ishida, "consequently, the ejector button is kept at the rearwardly depressed locked position while the PC card is used."

A review of any of the figures, and most clearly Figures 3 and 4, shows that locking the button section 20 has no possible effect on the intermediate section 10, the lever 5 or the bar 4. Thus, nothing about the locking engagement of the button section 20 has any locking effect on any antenna, much less the PC card. The idea here is to lock the button against inadvertent operation, not to lock the PC card.

Therefore, the rejection of claim 1 should be reversed.

**B. Is Claim 11 Obvious Over Johnson in View of Ishida?**

Claim 11 calls for providing a resiliently biased cam follower to ride in said track and to control the position of said antenna as it moves between retracted and extended positions.

In Ishida, the biased spring element 28 does not control the position of the antenna as it rides in the track, it locks the position of the button.

Therefore, the rejection should be reversed.

**C. Is Claim 16 Obvious Over Johnson in View of Ishida?**

Claim 16 calls for a track engaging element, said element laterally spaced with respect to the coil spring to enable the antenna to be guided as it is pushed to its extended position, said track engaging element being a cantilevered leaf spring.

The so-called track engaging element in Ishida does not enable the antenna to be guided as it is pushed to the extended position. The element in Ishida simply locks the button or unlocks the button, but has no guiding function. In other words, the card is in no way guided by any track engaging element.

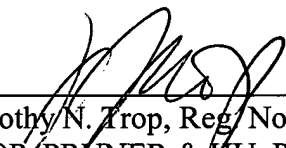
In view of these remarks, the rejection should be reversed.

## IX. CONCLUSION

Applicant respectfully requests that each of the final rejections be reversed and that the claims subject to this appeal be allowed to issue.

Respectfully submitted,

Date: February 20, 2004



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## APPENDIX OF CLAIMS

The claims on appeal are:

1. A personal computer card comprising:
  - an extensible antenna;
  - a coil spring to push the antenna from a retracted to an extended position;
  - a track laterally displaced with respect to the coil spring to guide the antenna as it is pushed to its extended position; and
  - a catch that retains the antenna in the retracted position in said track, said catch being spring biased.
2. The card of claim 1 wherein said track extends parallel to but is laterally displaced from the coil spring.
10. The card of claim 1 including a traveler that mounts said antenna and makes an electrical connection with a printed circuit board when said antenna is in its extended position.
11. A method comprising:
  - providing an extensible antenna in a personal computer card;
  - providing a coil spring that pushes the antenna from a retracted to an extended position;
  - displacing a track laterally with respect to said coil spring to guide the antenna as it is pushed to its extended position; and
  - providing a resiliently biased follower to ride in said track and to control the position of said antenna as it moves between retracted and extended positions.
12. The method of claim 11 including extending said track parallel to but laterally displaced from the coil spring.

13. The method of claim 11 including positioning a catch to releasably retain said antenna in the retracted position and enabling the catch to be released when the antenna is pushed beyond its retracted position.

14. The method of claim 13 including enabling the antenna to move more than 17 millimeters.

15. The method of claim 11 including enabling the antenna to move approximately 27 millimeters.

16. A traveler for extending an antenna out of a personal computer card, said traveler comprising:

an extensible antenna;

a coil spring that pushes the antenna from a retracted to an extended position; and

a track engaging element, said element laterally spaced with respect to the coil spring to enable the antenna to be guided as it is pushed to its extended position, said track engaging element being a cantilevered leaf spring.

17. The traveler of claim 16 wherein said track engaging element includes a U-shaped portion.